

THE DEVELOPMENT OF
RUSSIAN INDUSTRY

II

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THE DEVELOPMENT OF
RUSSIAN INDUSTRY

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PREFACE

Most people are prejudiced for or against Russia; it is difficult to find a person who has not formed a definite opinion concerning it, and who can give reasons why the Soviet will succeed or fail. Most people in the United States are opposed to the word "Communitistic" and to things which they associate with it. When fellow students learned the text of my thesis, most of them would sneeringly say, "Oh, a Communist, eh?" Such is the attitude of people toward Russia. They know little or nothing of the activities of that country, and think that anyone who tries to learn something of them is approving their policies.

Even in books the authors have a tendency to be prejudiced. One author will state that the people are living in virtual slavery, while others will claim they are enjoying the first freedom they have had. One will write that the nation is going to collapse industrially, while another will give figures to prove that it will undoubtedly become the world's leading industrial nation. In fact, from the books and articles on Russia it is difficult to form an accurate opinion of the condition of the country, for authors constantly contradict each other, and it is hard for me to find one who writes impartially.

It is not my intention to state that the Soviet is a success or a failure, nor to tell how the Russian people feel toward their government. There must be some who are opposed to it, but many more who would be in accord with any of its policies. The people must have reasons for going into cities to hold jobs of which they know nothing, and living in dirty, crowded quarters. There must be some recondite qualities in a socio-political system which have had such marked influence on the people. They have ceased making textiles, farm implements, and such, depending upon the insufficient supply of factory-made goods to meet their needs. Just why the people have done this, I have not been able to ascertain. They refused to purchase manufactured goods under the Tsar, and kept their home-craft industries under Lenine. Now, they have, to a large extent, quit making goods at home, and buy articles from the stores, when they are able to get them. The outstanding question is: why have they done this? Why did the people give up something that they had kept for centuries, and for which they had become famous? Were they forced to quit manufacturing necessities at home, or has the government been so diplomatic as to peaceably influence them to use manufactured goods for the benefit of their nation? Perhaps some day we will know, but not until more authentic material can be obtained on Russia, her progress, and her policies.

CHAPTER I

RUSSIAN MANUFACTURING PRIOR TO THE WORLD WAR

In the annals of manufacturing there has been nothing to compare with the spectacular rise of Russia in the industrial world. From comparative obscurity, it rose almost overnight to become one of the leading nations in manufacturing, and Russia today has far surpassed the boldest dreams the various Tsars ever had for it.

In order to understand the tremendous change which has taken place, one must have a clear conception of the purpose of capitalistic and socialistic industry, which has caused many peoples to misunderstand the work of the Soviet. The essential difference lies in the proposal to organize industry for use instead of for profit.¹ Under the capitalistic regime of the Tsar, industry was for the purpose of making profits for the owners and the stock-holders, e. g. the automobile works of the Riabushinsky brothers (to be discussed in detail later). But, under the socialistic plan industry is for the purpose of supplying the needs of the people. At present that aim is being fulfilled rather slowly.

Manufacturing in Russia during the Fourteenth, Fifteenth,

¹H. F. Ward, In Place of Profit, p. 3.

and Sixteenth Centuries was retarded by internal troubles. The peoples were not united, and cooperation was therefore difficult. "In Tsarist Russia the 120 million peasants were never regarded as constituting a market; for Russian capitalism, adolescent as it was, was eager only to conquer foreign markets."² Homecraft manufacturing was able to supply domestic needs; so factories were forced to sell their goods in the world market.

Manufacturing of necessities was one of the aims of Peter the Great, but during his reign, wars retarded any progress that might have otherwise been made. "Russia experienced its first period of conscious industrialization when, in the 18th century, industrial centers grew up in the Ural region."³ The serfs retarded progress of the new industries by steadily refusing to buy factory-made goods. However, the peasant was not just being stubborn, for under the Tsar he did not have the necessary money to make many purchases.

The materials for manufacturing were at hand, for from the earliest times silver and copper mines in the Caucasus Mountains have been known. Some of the bronze remains of ten thousand years ago found in Egypt may have been made partly from copper sent down from the Caucasus. No tin has ever been found

²M. Farbman, Piatiletka, p. 46.

³G. Dobbert, Red Economics, p. 93.

in those mountains, but it is a curious coincidence that the ancient Egyptian word for tin, 'khespet' sounds very much like 'Kazbek', the name of the second highest peak in the Caucasus.⁴

The Russians first made use of their resources by hand labor, as has been proved by the existence of their inlaid silver. In many of the villages, expert workers made a living by making articles to be sold in the larger cities.

The worker takes the cane or box which he wishes to decorate and with the point of a knife traces his design a quarter of an inch deep in the wood. Then he puts in the gash the narrow silver band. A rapid worker can inlay ten yards of silver an hour.⁵

Today this type of metalcraft still exists, while other types of homecraft manufacturing are carried on along similar lines, e. g.

Papier-mache has long been made in many Russian villages. It is simple to manufacture. Old paper boiled together with glue for a time, then pressed dry, can be molded into any desired form and acquires a hardness almost like that of wood.⁶

Also, in the line of leather manufacturing the peasant was able to acquire a reputation for his fine work. Russian leather was well-known on the markets of the world long before the peasants ever heard of such a thing as a machine. Their work was done by hand, and surpassed in loveliness anything that we produce in leather-goods today. In Kazan

⁴Wm. C. White, Made in Russia, p. 107.

⁵Ibid.

⁶Ibid., p. 35.

the leather used for slippers was usually horse-hide, beaten until it was quite pliable. The leather was then cut into strips and dyed; the dye used in this Tatag leather-work leaves an unforgettable odor. The slippers were then sewn from strips of a dozen different colors; a wooden sole and a high wooden heel were fastened to them, and they were ready to be sent to Moscow, whence they were shipped abroad.⁷ In this manner pre-industrial Russia manufactured many of its articles.

One must keep in mind the fact that Tsarist Russia was faced with the problem of developing industry without the cooperation of the people, and that the development came about through the initiative of the few industrially-minded men that lived there. Due to a lack of materials, the fields in which they could operate were very limited.

One fact, the significance of which can hardly be underestimated, is that the manufacturing industry in Tsarist Russia was built up on private initiative and had its origins in the home industries. This is particularly true of the ceramic, timber, chemical, and foodstuffs industries.⁸

Another fact that made manufacturing difficult was that the population-production **ratio** was out of balance. "It was a problem in Tsarist times, and in the 90's Count Witte adopted industrialization as a solution."⁹ But, even with the support

⁷White, op. cit., p. 90.

⁸Dobbert, op. cit., p. 283

⁹B. C. Hopper, "The Soviet Touchstone," Foreign Affairs, VIII (April, 1930), 380.

of the government, manufacturing was not able to increase to any great extent.

One of the principal weaknesses of the Tsarist regime was inefficiency; let us consider an attempt made to establish an automobile factory:

On a winter day in 1915, two men dressed in expensive fur coats stood in the deep snow in an undeveloped section on the outskirts of Moscow, closely examining a set of blue prints. They were the Russian millionaires, Sergey and Stepan Riabushinsky, examining the proposed site of an automobile plant the Tsarist government had asked them to build. With eleven million dollars supplied by the Tsarist war ministry to add to the four million dollars capital of a joint stock company they had organized, the Riabushinsky brothers decided that it would be a profitable venture for them. But, being more interested in profits than in automobile production, they took their time about getting the venture started. They concluded an agreement with the Italian firm Fiat, very profitable indeed for both the Fiat Company and the Riabushinskys, but very unfavorable for Russia. The Riabushinsky brothers pocketed eight million rubles and the Fiat Company over a million francs for the designs of the plant before any ground was broken. According to the agreement the first 150 Russian made automobiles of Fiat design were to be ready by March 17, 1917. When the Tsar was overthrown there was still no factory, only a small, hastily organized workshop, quite useless for producing automobiles. During the years of civil war that followed it was used for producing cigarette lighters and kerosene stoves.¹⁰

This will give an idea of the graft and corruption that took place--fifteen million dollars to manufacture cigarette lighters! Under such conditions it is not surprising that Russia did not become an industrial country under the Tsars.

¹⁰I. Likhechev, "Our Factory," Soviet Russia Today, (May, 1939), p. 12.

Other factories were built which produced materials on a small scale. At Putilov guns were made before the Revolution, as well as "tractors, heavy machinery, some locomotives and wagons, and a few experimental motorcars."¹¹ But, in no one line had they been able to produce articles that would be consumed by the country. For several years attempts were made to use native iron ore, and in "1893 Russia occupied the sixth place in the matter of foundry work; at the beginning of the present century she had already become the fourth."¹² So Russia ranked among the leading nations in the production of iron, while it also produced twenty-three million tons of coal.¹³ Up to the time of the World War, manufacturing continued on a small scale, but during the war and the hectic years of revolution that followed industry was seriously set back. Thus "the output of pig iron in 1913 was about four million tons. The Revolution and the Civil War reduced this output practically to zero."¹⁴ To make bad matters worse, industry fell off more during the Civil War than in the World War, and the newly forming government was left to bear the brunt of the burden of rebuilding industries which were practically non-existent.

¹¹W. Citrine, I Search for Truth in Russia, p. 49.

¹²G. Alexinsky, Modern Russia, 102.

¹³Farbman, op. cit., p. 107.

¹⁴Ibid., p. 107.

"In 1913, the technical level of Russian industry was considered 26% lower than the average for advanced countries. . . . By 1924 it was 52% lower."¹⁵ Besides this, the production of fuel was extremely low under the Tsar. In 1913, the last prewar year, Russia, from all of her vast oil fields, produced less than eight million tons of crude oil.¹⁶ This is far below the amount being produced today. However, Tsarist Russia did not need to worry about shortage of production, for then an economic crisis was usually a crisis of over-production, whereas today it is one of under-production. The industries today cannot begin to produce enough to satisfy the demands of the people.

In considering the types of industries carried on by the Tsarist regime, one would find that they were of many types, but that no one of them was very important. Metallurgical works existed in the Ural Mountains, and there were factories in, and around, Moscow. A beet-sugar industry was carried on near Kiev, and petroleum was the leading industry in the Baku region.¹⁷ Of these, the first to develop to any extent was the metallurgical industry in the Urals in the Eighteenth Century. Moscow was the center of the textile industry, its

¹⁵B. C. Hopper, Pan-Sovietism, p. 72.

¹⁶I. Schneider, "Baku--Soviet Oil Metropolis," Soviet Russia today, (May, 1940), p. 15.

¹⁷J. H. Robinson and C. A. Beard, Readings in Modern European History, II, 369.

factories producing practically all of the clothing manufactured outside of the homes in Russia. A typical factory of Moscow in the pre-revolution days would employ not more than one hundred people.¹⁸

As to the number of factories under the Tsar, there are few accurate statistics; however, estimates have been given, which may be accepted as being reasonably correct.

Of the 14,500 factories and workshops of which we have a knowledge, an enormous number were established in the last quarter of the Nineteenth Century. Before 1861, 2177 enterprises were initiated; between 1861 and 1870, 1285; between 1871-1880, 2100; between 1881-1890, 3030; between 1891-1900, 5788.¹⁹

This would seem to indicate that they carried on quite a bit of manufacturing, but one must remember that many of these factories were merely small workshops and did not do business on a large scale.

Today, the Soviet under socialistic motivation is doing far more toward supplying the needs of the people than did the Tsarist regime under capitalistic motivation. One reason for this may be the fact that they try to put into the hands of the consumer the means of purchasing needs, whereas, under the Tsar the consumer rarely had the necessary means, even if he had desired manufactured goods.

¹⁸Citrine, op. cit., p. 100.

¹⁹Alexinsky, op. cit., p. 102.

CHAPTER II

GROWTH OF PLANNED INDUSTRY

At the end of the World War and the period of revolution which followed, manufacturing had been almost destroyed. The war had consumed the available supply of goods, and most factories had closed their doors. Even though the need was greater than ever, they were not producing many supplies. This state of affairs continued under the reign of the Bolsheviks, who made no definite steps toward restoring industry and business even to the point it had occupied under the Tsar. When the Communists took over the government, industry was still in a state of lethargy, and for a time it so remained.

When I first came to Russia in 1921, I did not see the smoke of a single factory in a journey of two thousand miles which included Moscow, Petrograd, and the once prosperous cities of the Volga, now reduced to misery and famine.¹

The Russian peoples had undergone a change, which was to influence the future. New demands for manufactured goods had arisen in consequence of the war, which had revealed that the defensibility of a country is not safeguarded unless it has developed big industries of its own. Foreign capital refused to undertake industrialization; so the leaders were forced to make definite plans for the future. One of their

¹G. Dobbert, Red Economics, p. 1.

first aims was to move the cotton mills from Moscow to the source of the raw material in Turkestan. But the expense was prohibitive; so it had to be abandoned.²

✓ However, new plans were formulated. As a result, Russian industry began to adopt modern methods and turned its attention to a greater specialization of production. Naturally, this development had been aided by the World War; factories were compelled, in the interest of national defense, to expand and to adopt modern methods.³ It was Lenin who organized the New Economic Policy, which was intended to put industry on a profitable basis for both the producer and consumer. However, the New Economic Policy workers were not so honest, and some accumulated immense fortunes. Most of these fortunes were taken over by the government when Stalin reformed the New Economic Policy. One of the principal aims of Lenin was the electrification of the country, but the Russians laughed at his ideas, and called them not electrification, but electricity. Regardless of the differences of opinion, the New Economic Policy in February, 1920, adopted a scheme for the building of a network of electric-power plants, designed to furnish electric current for industrial and agricultural enterprises,⁴ a policy which the Soviet has continued to follow.

²Ibid., p. 96-97.

³Ibid., p. 95.

⁴Dobbert, op. cit., p. 5.

This carried out the formula of Lenin that "electrification plus Soviets equals Socialism."⁵

However, one must not get the impression that industry was completely at a standstill in Russia, for some factories were still in existence after the Revolution. In fact, Kalinin stated that no new factories were built after the Revolution until 1924.⁶ So, for a period of years a few Russian factories continued to produce materials. There was indeed need of planning an industrial system. The situation was so serious that Stalin felt mechanization was necessary to put industry on a profitable basis.

In order to carry out a comprehensive system, Stalin felt that definite plans must be made which would provide suitable working and housing conditions for the workers. Under more satisfactory conditions, he felt that production would improve. For this reason, the First Five-Year Plan was drafted and put into effect on October 1, 1928.⁷ The leaders forsook tradition and conceived a plan that was not merely experimental, but one that was based on sound business ideas. The leaders believed that once the country was equipped with adequate facilities for the manufacturing of the means of production, the country would become independent of capitalistic states, and could

⁵M. Farbman, Piatiletka, p. 112.

⁶A. Karlgren, Bolshevist Russia, p. 98.

⁷Dobbert, op. cit., p. 3.

then turn its attention to light industry--the production of goods for the consumers.⁸ Therefore, the First Five-Year Plan stressed the development of heavy industry. Production of the means of production became the chief interest. But, other industries were not to be ignored, for they occupied a prominent place in the background. "The Soviet plunge into planned economy has affected vitally the everyday lives of the 160,000,000 inhabitants of the Soviet Union."⁹ The Five-Year Plan is an immense work in itself, and is the first comprehensive, long-period plan ever organized. It is not a mere abstract theory, but is more an assembling of concrete facts and ideas of developments which can be controlled and co-ordinated to a high degree of efficiency.¹⁰

The first step in carrying into effect the Plan was to divide the country into fourteen economic regions, of which seven stressed the development of heavy industry. The regions were: "Leningrad (heavy industry), Moscow (manufacturing industry), Ivanovo-Vosnesensk (textile industry), Nizhni-Novgorod (production of instruments of production), Ural (mining and smelting), Lower Volga (manufacturing industry),

⁸V. M. Dean, Soviet Russia, p. 16.

⁹W. H. Chamberlin, Russia's Iron Age, p. 5.

¹⁰E. Burns, Russia's Productive System, pp. 245-255.

and West Siberia (heavy industry)."¹¹ For each of these districts definite plans were made, which were to be carried into effect as soon as possible. In many cases these plans were for the purpose of increasing electrification. Thus, in developing the central industrial region,

(a) two central steam electric stations were to be built in Moscow, with a capacity of 80,000 kilowatts; (b) extension of the capacity of the recently erected Kashiva station from 12,000 to 150,000 or 250,000 kilowatts; (c) construction of an electric power plant at Bobrikov, the fuel for which is to consist entirely of the neighboring Moscow coal, with an initial capacity of 150,000 and an ultimate capacity of 300,000 kilowatts; (d) increasing the capacity of the Shatuva power plant from 92,000 to 136,000 kilowatts; (e) extending the capacity of the Moscow municipal electric stations from 100,000 to 200,000 kilowatts; (f) completion of the great Ivanovo-Vosnesensk electric station, with a capacity of 90,000 kilowatts; (g) extension of the Balakhna station near Nizhni-Novgorod to a capacity of 150,000 kilowatts.¹²

Much of this electric power was furnished by dams built on some of the larger rivers, for water-power was abundant. On the Dneiper River was planned a dam to turn dynamos to supply electric power for hundreds of miles around, even to the huts of the peasants in the agricultural sections. Strange as it may seem, this improvement is not always welcomed; one old peasant complained, "They put a lamp in my house and I nearly burst my lungs trying to blow it out."¹³

¹¹Dobbert, op. cit., p. 101.

¹²G. T. Grinko, The Five-Year Plan of the Soviet Union, p. 74.

¹³Wm. C. White, Made in Russia, p. 176.

The newspapers exult in the completion of new factories--fifty-five plants in Moscow alone--and the renovation of almost three times that number of old ones. Some of these factories, such as the AMO automobile works, the Daganovitch ball-bearing plant, the Freser tool-cutting shop, are proclaimed by the Russian news agencies to be among the largest and best equipped in the world.¹⁴ At Stalingrad was erected the large tractor construction works and factories for the production of agricultural machinery, not to mention the other undertakings which have been assembled around these two industrial units. Due to the construction of an electro-technical industry and tractor works, Kharkov, in the Ukraine, has been able to substantially extend its productivity, while in Rostov-on-the-Don a new industrial center to serve the North Caucasian grain-producing area has recently been established. Even Siberia has felt the influence of the Soviet's plan, for the Kuznetsk district has been equipped with industrial plants. Another instance of the Plan's success in organizing industry is in the town of Ivanova Vosnesensk, once a mere village, but now a center of textile manufacturing.¹⁵ Small villages became industrial centers almost overnight. Consider the case of Magnitogorsk. When the First Five-Year Plan

¹⁴M. Hindus, The Great Offensive, p. 17.

¹⁵Dobbert, op. cit., p. 100.

was begun, the site was uninhabited, but now it is a town of two hundred thousand people centered around a plant that is the Soviet's leading and the world's eighth largest producer of iron.¹⁶

This Plan was completed in four years and three months. Originally it called for the building of only 12,600 railroad cars in its last year. Actually, in 1931, the third year of the Plan, 20,000 cars were built. In the output of tractors, the Plan did exceedingly well in raising the output in 1931 to 40,000 units. Eight hundred and twenty-five locomotives were supposed to be manufactured in the last year, but as early as 1931, 812 were built. The plan was equally successful in the light industries. They produced twenty-seven million pairs of rubbers in 1913; and by 1931, the number had increased to 63.9 millions, or more than 2.9 millions more than the last year of the Plan demanded. In 1913, Russia manufactured 17 million pairs of shoes, but in 1931 the figure rose to 76.8 million pairs, exceeding the schedule for the last year of the Plan by 16.7 millions. They produced in 1913, 94 thousand tons of soap, and in 1931, 189,000 tons, but still the demand far exceeded the supply. In the oil industry in 1931, they went far ahead of the Plan and became second only to the United States. In machine-building the Soviet is rapidly approaching

¹⁶"Efficiency, Not Speed, New Soviet Aim," Business Week, March 26, 1938, p. 50.

second place, and in manufacturing agricultural implements she is moving toward first place. This array of figures is exceptionally significant when one considers that it summarized, in part, the success of the Plan. In the period of the first Plan, the Communists manufactured the following agricultural implements: 195,800 tractors; 13,690 combines; 62,400 tractor threshing-machines; 173,560 tractor ploughs; 3,229,150 horse-drawn ploughs; 193,960 tractor grain-drills; 501,730 horse-drawn grain-drills; 37,500 binders for tractors and horses; 29,520 tractor mowing-machines; 9,330 beet diggers; 15,370 flax gins; 56,550 horse-drawn threshing-machines; 3,340 cotton-picking machines; 7,000 potato diggers; and 9,600 potato planters. In addition to this, factories produced manure-spreaders, hay-rakes, cotton-drills, hay-loaders, silo cutters. It was the first time in the history of the country that such machinery had been produced. In addition they built 402 grain elevators in the first three years of the Plan.¹⁷

However, the First Five-Year Plan failed to provide for the manufacture of many articles which were desired. This was not intentional, but there was so much to be done that some of the more important articles must be placed ahead of those of less importance. Other materials will be produced when the progress of manufacturing permits. Maurice Hindus, in

¹⁷Hindus, op. cit., p. 36-37.

summarizing the First Plan, states: "So far as I know even now, at the end of the First Five-Year Plan, Russia is not manufacturing either fountain pens or cameras; and the dream of Russian school-children is to come into possession of a good pencil."¹⁸ There are entire villages without a single clock or watch.¹⁹

Also, one must not fail to take all of the statements on the progress in industry with caution, for many of the machines produced in the Russian factories are defective. It is hard to make the necessary repairs, for machine parts are scarce since the Plan merely provided for the construction of machinery at a rapid rate and the production of spare parts was not seriously undertaken. It has been the complaint against machinery that it does not function properly and that the workers ruin innumerable parts because they do not know how it must be handled. Besides, there has been considerable confusion in organizing the factories on an efficient basis. In the manufacturing of locomotives in the towns of Kolomensk, Bryansk, Lugansk, and Kharkov, the engines are of the same size, model, shape, and weight; yet, no two factories use the same amount of iron in producing them. The engines weigh ninety-six and five-tenths tons, while the amount of iron used

¹⁸Ibid., p. 24.

¹⁹L. Fischer, "The Brake on Soviet Industry," Current History, XXXVIII (July, 1933), 414.

varies from one hundred seventeen to one hundred thirty tons.²⁰

When the First Five-Year Plan was completed, the Soviet immediately started on a second Plan that devotes more attention to production of consumer's goods.²¹ It is the intention of the Second Plan to keep running the program put in motion under the First Plan, and train mechanics to repair the machinery when needed. Russia is stressing improvement in the manufacturing of machinery so that more efficiency may be obtained. In drafting the Second Plan, Stalin declared: "the plan had succeeded beyond the expectations of the most enthusiastic, and 93.7 per cent of the industrial program had been accomplished."²² And, in answer to the objections that Soviet industry was not on a paying basis, he stated: "that it was a question of general national economy and of non-paying enterprises becoming paying with time and experience."²³

The Second Five-Year Plan called for a sharp increase in the production of light industry, and in turn for an increase in the production of machinery for the manufacturing of these articles, so that heavy industry continues, but on slightly different lines. For the year 1935, the Plan called for the

²⁰Hindus, op. cit., p. 43.

²¹Dean, op. cit., p. 17.

²²W. Duranty, Duranty Reports Russia, p. 258.

²³Ibid., p. 260.

production of numerous textile machines, for if they were not produced, many newly constructed mills must remain idle. It is the duty of heavy industry to see that this does not happen.²⁴ The Plan goes on to provide that by the end of 1937, the cotton industry should have 9.1 million spindles in operation and 246,000 looms.²⁵ The Second Five-Year Plan extended from January 1, 1933, to December 31, 1937. It stressed production of consumption goods such as clothing, kitchen utensils, furniture, and bicycles. As the Plan progressed the people realized more and more benefits from the First Plan.²⁶

In the last year of the Second Plan the industrial output had increased 800 per cent above that of 1913. As a result, Russia has attained second place among the countries of the world in industry, ranking first in the production of airplanes, tractors, agricultural combines, hemp, and wheat, and second in respect to gold, coal, oil, and electricity. In the production of electric power there has been an increase of more than twenty times the amount produced in pre-revolutionary Russia.²⁷

The Soviet is now working on the completion of a Third

²⁴"Russia to Buy Textile Machinery," Business Week, (December 1, 1934), p. 24.

²⁵Ibid., 24.

²⁶C. Lamont, The Story of Soviet Progress, p. 14.

²⁷Ibid., p. 14.

Five-Year Plan which is emphasizing again the production of consumer's goods. Every effort is being made to let the people realize as much as possible from their labor, and it would appear that the Soviets have finished the most gruelling stage of socialistic construction. They are now working at a slower tempo, and the nervous pressure of hasty production has become considerably less.²⁸ It may be several years before we can learn just what progress they are making under the Third Plan.

It is true that from the point of view of industrial production Russia started as a very backward country. Modern industry was not exactly non-existent, and development was sure to come in time. But the Soviet had a poor inheritance with which to start, and took definite, commendable steps toward improvement. The desire to become an industrial nation, equal to any in the world, was one of the leading motives for the program. Just as Vladimir, a thousand years ago, sent ambassadors to the West to find a new religion, and as Peter sent envoys abroad to learn the arts and crafts of Western Europe, so the Soviet today sends out citizens to discover the most advanced methods of modern industry, so that Russia can make use of them.²⁹ It would seem that the result has been satisfactory. Production is at the present far from the maximum, and there is a lack of skilled labor; yet factories

²⁸Ibid., p. 46.

²⁹White, op. cit., p. 180.

are running and wheels are turning where neither existed before.³⁰

Most of the industries are located in the Central Muscovite Provinces, the Leningrad district, and the Ukraine. In the same region will be found some 40 per cent of the country's population.³¹ The value of these industries was estimated at eleven billion rubles in 1913, and has increased to 100,375,000,000 rubles in 1938.³² So, undoubtedly, Soviet industry is forging ahead. There is no longer any doubt that the average output of each factory is becoming less, but quality is now stressed more than quantity. Despite this planned reduction,

the clothing industry showed an increase in annual output of 5.3 per cent; the knitting industry, 29.5 per cent; the soap industry, 13 per cent. This rapid rise in output is due to the fact that formerly the major part of the output of textile goods was produced by the homecraft industry.³³

In the Skorokhod Shoe Factory, built under the Tsar, 3,000 people were employed before the Revolution, who turned out 3,000,000 pairs of shoes per year. Now it employs 14,000 people and produces 13,000,000 pairs. The ventilation in the factory was so good that there was no odor from the machines or the leather. Also, there is no belting in the plant, for every machine is driven by a separate electric

³⁰F. Griffin, The Soviet Scene, p. 156.

³¹I. D. Levine, Red Smoke, p. 36.

³²"Land of Large Scale Industry," Soviet Russia Today, (June, 1939), p. 13.

³³Dobbert, op. cit., 104.

motor.³⁴ In the Kaganovitch Ball-bearing Factory, it was planned to increase production in one year from 25,000,000 to 50,000,000 bearings.³⁵ In the field of large-scale industry, the values have greatly increased. The output, in terms of prices of 1926-27, totalled 11,000,000,000 rubles in 1913, but sank to 1,700,000,000 rubles in 1920, only to rise to over 90,000,000,000 rubles in 1937.³⁶ The great increase in the value of Russian industry may more easily be understood by making a study of the chart below, which gives the increase in the volume from 1927 to 1936.

TABLE 1

U.S.S.R.--IN THE INDUSTRIAL BIG TEN*

	Position of Sov. Union in World Production		Per Cent Increase of Output	
	1927	1936	U.S.S.R.	World
Coal	7th	4th	270	3
Pig Iron	6th	3rd	372	6
Steel	5th	3rd	325	24
Electricity . . .	10th	3rd	500	50
Oil	2nd	2nd	150	40
Cement	8th	4th	250	8
Paper	11th	6th	130	20
Ginned Cotton . .	4th	4th	250	33
Rayon	18th	9th	5,500	330
Aluminum	11th	3rd	3,300	70
Gold	5th	2nd	650	100
Motor-cars . . .	10th	6th	13,600	40

*"U.S.S.R.--In the Industrial Big Ten," Business Week, (October 30, 1937), p. 17.

³⁴W. Citrine, I Search for Truth in Russia, p. 39.

³⁵Ibid., p. 86.

³⁶V. Molotov, "20th Anniversary Report," Soviet Russia Today, (January, 1938), p. 6.

This chart also shows that in the production of coal, pig iron, steel, electricity, oil, cement, paper, ginned cotton, rayon, aluminum, gold, and motor-cars the Soviet has increased much more rapidly than the world. One striking advantage that the factories have, which has enabled them to develop rapidly, is electrification. Eighty per cent of their plants are electrified, a higher proportion than in any other country in the world.³⁷

This has involved heavy expense. Thus, in 1938-29 investments amounted to 320 million rubles; the next year it doubled, and it was estimated in 1931 that it would rise to 1,180,000 million rubles.³⁸ However, this is not surprising in view of the construction which is taking place, including the Dnieprostroy, which is now the largest water-power station in Europe.

The Soviet has continually tried to reduce the extraordinarily high cost of production. In this field they have been fairly successful, as is revealed by the fact that the cost of producing a tractor in the Stalingrad Tractor Works was reduced from 5,793 rubles in January, 1931, to 3,328 rubles in December, 1931. However, in spite of the attempts made, production costs on the whole have risen 3.7 per cent for the

³⁷Wm. Maxwell, "Advances of Soviet Economy," Soviet Russia Today, (January, 1938), p. 6.

³⁸Farbman, op. cit., p. 112-113.

entire nation; in heavy industry 5.5 per cent, and in the light industry 1.25 per cent.³⁹ Reducing cost of construction depends on securing skilled labor and technicians, which will take years. At present there are some 30,000 engineers in the country, while the Piatiletka, or Five-Year Plan, required 1,200,000 such men. Nine hundred thousand engineers must be trained to supply the demand.⁴⁰

"The technical schools, even the highest, are now regularly attached to the factories; and all the new factories have special shops where workers are trained by the methods recognized by the Central Institute of Labor."⁴¹ The workers come from the agricultural regions and are hence unskilled in their work. With the Russian shortage of skilled labor, it was necessary to secure assistants abroad. Technicians were hired from England, Germany, France, and the United States who were expected to train the Russian workers to use efficiently machinery. While industrialization of the Soviet has vitally affected the everyday lives of the inhabitants, it has failed to produce from them the needed workmen to handle machinery. Today, because of the lack of men capable of running factories, "efficiency of operation and quality of output remain weak spots in the Soviet drive for industrialization."⁴²

³⁹Dobbert, op. cit., p. 106.

⁴⁰Farbman, op. cit., p. 61-62.

⁴¹Ibid., p. 63.

⁴²Chamberlin, op. cit., p. 55.

CHAPTER III

HEAVY INDUSTRY

Under careful planning of the Soviet, the development of heavy industry has been an outstanding feature. The production of machinery, trucks, tanks, automobiles, turbines, and agricultural equipment was considered very urgent. Accordingly, the First Five-Year Plan provided for rapid construction of factories to supply these necessities. If the Soviet has seemed to stress heavy industry too much, it may be due to the fact that under the Tsar there was an outstanding shortage in this line; now, they are interested in improving their conditions. The Plan has resulted in the construction of many new factories and improvement of the old ones. Thus, the development of industry has given the country some fifteen hundred new plants, some small, others as large as any in the world.¹ Beside the new factories, there are the old ones which have been renovated and equipped with new machinery. These factories are not able to furnish the desired quantity of machinery for heavy industry, but they are rapidly coming nearer the realization of their needs.

An outstanding hindrance to completion of their plans

¹M. Hindus, The Great Offensive, p. 45.

has been the expense. The cost of transportation of raw materials in the Soviet Union is higher than in any other industrial nation. Even coal and iron are seldom found in the same regions, which makes the production of iron and steel materials run higher than ordinary. The cost of transporting one ton of coal from Kemoervo, in the Kuznetsk region, to Magnitogorsk, the Magnetic Mountain, is \$7.60. The Ural-Kuznetsk industry is faced with a similar dilemma. In America, ore is hauled over 1,500 miles, but in Russia the haul from the Urals to the Duznetsk is from 1,300 to 1,500 miles by a combination of waterways and railroads, which is not yet constructed, or from 2,000 to 2,200 miles over the railroads only. It will be exceedingly difficult to operate the Magnitogorsk with coal costing \$7.60 per ton to transport, and it is doubtful if there is enough iron there to justify the building of a water-way to connect it with the Siberian coal fields.²

Despite the difficulties of production, commendable progress has been made in heavy industry. During the first five months of 1935 the increase in production was more than twenty-five per cent over the corresponding period of 1934.³ But it must be remembered that in this period it was Russia's plan to

²I. D. Levine, Red Smoke, p. 40.

³E. S. Furniss, "The Costs of Soviet Progress," Current History, II (August, 1935), p. 550.

sacrifice everything for the development of heavy industry. Other lines of production were forced to wait until heavy industry was advanced before much attention was given to them. The Soviet Union in 1936 had increased their output of steel so much that they were second only to Germany among the European countries,⁴ and they expect to move into first place within the next few years. All increases are planned for years in advance; the Third Five-Year Plan provides:

In 1942 the industry of the U.S.S.R. must turn out 400,000 motor-cars (a 100% increase), 230 million tons of coal, 54 million tons of oil, 22 million tons of pig iron, 27,500,000 tons of steel, and 21 million tons of rolled steel. It must increase the output of the machine building industry 125 per cent, of steam turbines 380 per cent, of steam boilers 360 per cent.⁵

As a result of this development of heavy industry, manufactured goods for the consumers are being crowded out, and the Soviets must provide for increasing the output of materials for the consumers. There has been a considerable extension of the textile industry in the vicinity of Moscow. Also, they have constructed several factories for the production of artificial silk and woolen goods. They have even established a few new factories for the making of footwear. But the increase in production cannot begin to meet the demands of the consumers,

⁴"Foreign Affairs," New York Times, June 20, 1937, Sec. 4, p. 5.

⁵V. Molotov, "The Third Five-Year Plan," Soviet Russia Today, (March, 1939), p. 10.

which is growing rapidly since the practical abolition of homecraft industry. The Russians formerly made in their homes most of the things they needed, and some even managed to sell their products in the larger cities. The Industrial Revolution did not affect them when it did other European countries; so the homecraft industries flourished there long after they had been abandoned elsewhere. Even today there are traces of manufacturing within the homes of the peasants, but such activities are nothing to compare with that of Tsarist Russia.

Progress in heavy industry, according to many critics, has been hampered by a shortage in the needed materials. It has been claimed that the Soviet is singularly poor in iron, copper, gold, and silver, the four essential metals for the completion of Stalin's Plan. If the power to run the factories was considered no problem to the Russians, and if they had a first-class transportation system, they would still be in need of the necessary metals of production.⁶ It is estimated that the iron ore deposits of Russia amount to four tons per capita, whereas in Sweden there are 390 and in England 100 tons per person. The Magnitogorsk plant alone must have three million tons of iron ore and six and one-half million tons of non-ferrous metals for the year of 1932.⁷ If the Magnetic Mountain were to produce iron ore at the same rate of output as the Pennsylvania field, the supply would be exhausted within

⁶Levine, op. cit., p. 43.

⁷Ibid., p. 46.

four years.⁸ But the Magnetic Mountain does not supply all of the iron ore for the country--only a large part of it. Also, they have not deemed it necessary to attempt to match the Pennsylvania rate of output. As for the vast iron ore reserves of the Asiatic part of the Soviet, it has been stated that they amount "to 1,836 million tons, with an iron content of 774 million tons. Half of this total comprises the visible and probable reserve; the other half--the possible reserve."⁹

But this is only the opinion of the opponents of Russia; it is possible to find data, just as abundant, to the effect that Russia has more raw materials than they can use for years to come. The authorities have released statements concerning the production of iron ore. By 1921 the production of pig iron had shrunk to only seven per cent of the four million tons produced in 1913. Even when the Piatiletka, or First Five-Year Plan, was drafted the output was fixed at the rate of four, five, six, eight, and ten million tons for the series of years from 1929 to 1933. Later when the Plan called for a production of 17 million tons of pig iron, they stated that it would be possible to meet the demand.¹⁰ Another report gives an increase in the production of pig iron from 1.5 million tons in 1925 to 4.9 million in 1930. Also, steel production increased from 2 million tons to 5.3 million tons,

⁸Ibid., p. 46.

⁹Levine, op. cit., p. 48.

¹⁰H. Farbman, Piatiletka, p. 104.

and rolled iron from 1.6 million tons to four million tons in the same period of time. The output of fuel had multiplied itself by three to three and one-half times within the space of six years, but the output of metals had increased by only two and one-half times. The Five-Year Plan called for a production of seventeen million tons of pig iron in 1932, and the Soviet actually achieved that amount in 1931. Under the Second Five-Year Plan the Russians expected to produce twenty-two million tons of pig iron.¹¹ To do this it would be necessary to extend the metallurgical regions to cover the Kerch Peninsula in the Crimea and the Kuznetsk Basin in Siberia and the Lipetsk district in the Central Black Soil Belt. The Yugostal Trust alone would have to erect from twelve to fifteen new blast furnaces with an annual capacity of 200,000 tons each in the Ukraine.¹² Undoubtedly, production of iron is being increased very rapidly, for in the first three months of 1934 Russia made more pig iron than any other country.¹³ In 1938 the output reached nearly fifteen million tons of iron ore, which was mostly used at home, compared to three million tons in Germany.¹⁴ Regardless of this increase in production, the needs of Soviet Russia have not been satisfied, because it is known that some of

¹¹G. Dobbert, Red Economics, p. 102.

¹²G. T. Grinko, The Five-Year Plan of the Soviet Union, p. 95.

¹³"Watch Russia," Business Week, (April 22, 1934), p. 24.

¹⁴"Robbing Stalin to Feed Hitler," Business Week, (October 21, 1939), p. 52.

the factories are being forced to close down, pending the receipt of supplies of iron ore.

In consuming vast amounts of iron, the industries are producing, among other things, automobiles. Before 1924 Russia had no automobile factories. Of course, the Riabushinsky brothers were supposed to have erected a factory, but it was not completed under the Tsar. Between 1924 and 1928 mechanics managed to turn out about 1000 cars, all of them practically made by hand. Mass production got its start under the First Plan, and between 1928-32 increased to 57,000 cars. The Third Plan expects a production of 1,100,000 cars by the year 1942. An interesting feature of these automobiles is that they do not all burn gasoline; some models are now in use which burn kerosene, natural gas, butane, propane, acetylene, charcoal, and anthracite.¹⁵ The plant which first produced automobiles in 1924 was developed from the old factory of the Riabushinsky's; its name was changed to the AMO. On November 7, 1924, the AMO workers produced their first automobiles--ten in number. In 1929 the plant was reconstructed so that it would have a capacity of 25,000 automobiles a year. By 1931 the work was completed, leaving a new plant which employed 20,000 workers.¹⁶

¹⁵"Rise of Russia's Auto Industry," Business Week, (November 25, 1939), p. 46.

¹⁶I. Likhachev, "Our Factory," Soviet Russia Today, (May, 1939), p. 12.

Another plant constructed by the Soviet was located at Nizhni Novgorod, which is the seat of the new Ford factory. It was supposed to produce 30,000 machines by 1932; but, due to a variety of circumstances, among them insufficiency of steel, turned out in the last eight months only 2,400 cars. The combined output of all the factories for 1932 was 26,700 automobiles.¹⁷ This output may seem very small, but it must be remembered that full production did not begin until October, 1931. In 1930, they made and assembled only 8,550 cars; by 1933 the AMO and Nizhni Novgorod plants each turned out sixty-five cars daily, and a third factory in Yaroslavl had begun manufacturing five-ton trucks.¹⁸ In November, 1933, the former Riabushinsky plant changed its name to the Stalin Plant, or the AMO, and started production of the three-ton ZIS-5 truck, and in December of the same year it manufactured an autobus. In January, 1937, the first seven passenger limousine of Russia was assembled in their factory. The 45,000 workers, increased from 20,000 since 1931, have seemingly mastered the technique of construction, for the plant has already given the country some 300,000 three-ton trucks, and many passenger cars. For 1939, it planned to produce 8,000 gas generating automobiles, and for 1940, 20,000. When the factory starts to run at full capacity, it will produce 95,000

¹⁷Hindus, op. cit., p. 39-40.

¹⁸Ibid., p. 40.

trucks and 16,000 light cars annually. Even now, it is making 220 trucks and thirteen passenger cars daily.¹⁹ Russia leads Europe in the production of trucks, and is second only to the United States. In the Molotov Motor Factory the 25,000 workers had an output of 260 cars a day, but assembled only 170 of them in the plant, the remainder being sent by river steamer to Moscow to be assembled.²⁰ The Soviets now sell automobiles on the European markets, for they are producing more than they need. It is their intention to increase their output until they are second to none; this may be accomplished if their needs for automobiles become greater than they are now, for they have realized the value of motorization, not only in their army, but in daily life as well.

The development of the automobile industry has not been rushed, for there was no great need for automobiles for a time. The Soviet has few roads suitable for comfortable travel, and the streets in its cities are none too good. It has in the last few years begun to put more stress on production of automobiles, and today "the Soviet government is building more than 700 automobiles a day,"²¹ which is a sufficient number.

¹⁹Likhachev, op. cit., p. 12.

²⁰W. Citrine, I Search for Truth in Russia, p. 148.

²¹"Robbing Stalin to Feed Hitler," Business Week, (October 21, 1938), p. 52.

One of the more pressing needs of the Soviet is for agricultural machinery, for its agrarian policy provides for the use of machinery drawn by tractors. In the past its machinery was made to be used with horses, and was not suitable for tractors; so there must be an output of a new type of equipment. It is Russia's intention to abandon gradually horse-drawn machinery, except on smaller farms where tractors would not be suitable. Accordingly, they are now rushing production of new farm machinery. By the year of 1935 nearly 100,000 tractors and 21,000 threshing combines had been added to the country's agricultural equipment within one year's time.²² Up to 1928 all agricultural equipment factories were equipped to produce only tools for the peasant--horse-drawn machines. In that year only three per cent of all the machines produced could be used with a tractor. It was expected that by 1931 sixty per cent of the equipment would be tractor-drawn. This would mean that all of the machinery in the factories must be replaced by new and heavier models. It would necessitate supplying the plants with stronger steel and wood. With the rapid changes in agricultural machinery, there is a similar rapid change in the factories. The Selmash plant at Rostov was changed three times while under construction. The plant was originally intended to produce horse-drawn machinery, but now

²²E. S. Furniss, "The Cost of Soviet Progress," Current History, IC (August, 1935), 550.

makes tractor-drawn binders and reapers. The output of the factories was valued at 321 million rubles in 1931, which was more than five times the pre-war amount. This work is far ahead of all other industries, and is expected to surpass the United States within a few years.²³

Russia's principal aim is the production of tractors. Russia has erected three new factories at Stalingrad, Kharkov, and Cheliabinsk, which was merely a Siberian village that was turned by industry into a city, a frequent occurrence in the development of Russia.²⁴ The Putilov works are being enlarged so as to allow for an output of about 20,000 tractors annually. The Putilov factory was at first without coal, oil, or minerals, but that has been remedied; now Putilov even has a supply of skilled labor. If there is need for the construction of a machine that other plants cannot produce, the task is assigned to Putilov.²⁵ The Stalingrad factory has been considered one of the largest and best equipped tractor plants in the world. Its annual output is estimated at some thirty thousand twenty horse-power tractors of the International Harvester type. This tractor works was completed in 1930, but despite its modern equipment and the direction of American

²³Farbman, op. cit., p. 202-203.

²⁴A. Monkhouse, Moscow, p. 179.

²⁵L. Fischer, "A Week in a Soviet Factory," The Nation, CXXXV (September 21, 1932), 248.

mechanics, it did not begin to function efficiently until 1932.²⁶ The factory had to make arrangements to get its steel from the United States and Czechoslovakia,²⁷ but it is now able to get its supply from the Soviet. The Kharkov plant was designed to produce fifty thousand fifteen to thirty horse-power tractors, while the one at Cheliabinsk was equipped for the production of twenty-five to sixty horse-power caterpillar tractors, and will turn out about forty thousand of these a year, when capacity output is possible.²⁸ The Orjohnikidzie Tractor Plant now produces 152 tractors per day of the caterpillar type, and may exceed this amount later.²⁹ All of the tractor factories provide for an increase in production, which may, or may not, be possible to attain. It is true that they have been able to improve their output in the last few years, but they cannot advance very much until there is more skilled labor for the factories.

The agrarian policy of the Soviet has influenced the production of tractors, for motorized farming is one of its most modern objectives. Except for tractors, salient branches of

²⁶L. Fischer, "The Brake on Soviet Industry," Current History, XXXVIII (July, 1933), 415.

²⁷F. Griffin, Soviet Scene, p. 162.

²⁸Farbman, op. cit., p. 205-206.

²⁹Citrine, op. cit., p. 173.

heavy industry is lagging behind the quotas set by the State.³⁰ The Soviets expect an annual output of over three million horse-power from the factories.³¹ It is very possible that they will realize this, or even surpass all of their aims, for they are continually stressing the production of tractors. With foreign affairs as they now are, tractors are more in demand than ever before; but, they are needed for the construction of war tanks, not for the farms. They are not being caught unprepared, for they have constructed motorized units which outnumber those of any other European country.

There is one outstanding criticism of the Russian-made tractors--they seem to have very bad pistons, and the factories have not been able to eliminate this trouble. However, many of the tractors break down because of poor drivers, who do not know how to handle properly their machines.³² Since spare parts are difficult to obtain, many of the tractors are forced to remain idle until repairs can be made on them.

One of Russia's greatest difficulties is in transportation: roads are very poor, and the mileage of railroad tracks is small. For this reason it is not necessary to construct

³⁰"Soviet Saddles Blame on Saboteurs," Business Week, (April 3, 1937), p. 54.

³¹Farbman, op. cit., p. 206.

³²L. K. Emhirst, Trip to Russia, p. 42.

locomotives in many factories. However, some plants are producing them in small numbers, and others are being constructed, as the Donetz Basin, which will have special departments for locomotive construction. The factory at Dnieprovsk has a branch which makes railway cars, and another plant is under construction at Nizhni Tagil for the same purpose.³³ Other factories, such as Putilov and Kharkov, produce locomotives, but only in very small numbers.³⁴ It is possible that in time Russia will carry on a program for the building of railroads, which will necessitate an increased output of engines, but, until it does, there is no need for an extensive building campaign.

Another rapidly growing branch of heavy industry is machine construction. This is due to the policy of the Soviets to use machinery, instead of hand labor, whenever possible. The Industrial Revolution of Russia made necessary the production of machinery, not only to make tractors, tools, cloth, and shoes, but to make other machines as well. In the year 1925, the production was valued at only 730,000,000 rubles, and in 1931 at 5,724,000,000 rubles. Of this amount the agricultural machine-construction industry was 441,000,000 rubles in 1931, as compared with 48.6 million rubles in 1925. The output of tools and implements showed an increase from 2.5 million rubles in 1925 to forty million rubles in 1931. Thus, the production of

³³Grinko, op. cit., p. 103.

³⁴Ibid., p. 105.

machinery has increased itself by eight to ten times in the space of six years.³⁵ The increase in output of machines has necessitated construction of new factories, and enlargement of old ones. Accordingly, the First Five-Year Plan provided for the rebuilding of the Kramator machinery plant in the Donetz Basin at a cost of 45 million rubles, and the completion of the heavy machinery plant at Sverdlov in the Urals at a cost of about 50 million rubles. Machine tools are now being produced at the Sverdlov plant in Leningrad, at Krasny Proletary in Moscow, at Dvigatel Revilutsii in Nizhni-Novgorod, and at the Kramator Plant.³⁶ Even the construction of new factories, and enlargement of old ones, has not enabled Russia to produce all the needed machines; they have in their factories many units made in England, France, Germany, and the United States. It will be many years before they have attained self-sufficiency in machine construction.

Hand in hand with the Soviet program for electrification has gone the development of turbine construction works. Turbine manufacturing is centered in the Leningrad Metal Works, which produces most of the output. The First Plan provided for increasing the capacity of turbines from 60,000 to 650,000 kilowatts.³⁷ The factory of Putilov was the first to make

³⁵Dobbert, op. cit., p. 102.

³⁶Grinko, op. cit., p. 102.

³⁷Ibid.

turbines, but others were constructed to aid in increasing the output.

The Russian industrialists are now working in a field made possible by one of their Swedish neighbors, Knudsen, who invented the Diesel engine. The production of Diesel engines in the Soviet is a comparatively new industry, and is limited to three major plants: the Kolomna, the Russkey Diesel Plant at Leningrad, and the Sormovo Plant.³⁸ They are using the engines in ships, trucks, automobiles, and are even experimenting with them in locomotives. The vast oil fields should make the Diesel a popular engine, for crude oil is all that is needed to operate it.

Industry has continually been hampered by a shortage of good boilers; so Russia has turned the production of these over to the factories in Leningrad, the Parostroy in Moscow, and the boiler plant at Taganrog.³⁹ It is hoped that these plants will be able to improve the boilers so that they will function properly, and not retard production as they have done in the past. However, Russia has experienced more difficulty in this than it anticipated, and to the present has not been successful in producing boilers which are of first-class quality.

There is no need to pretend that heavy industry has been overwhelmingly successful, for many flaws have appeared in the products. The looms in the textile factories are worn and need

³⁸Ibid., pp. 101-102.

³⁹Ibid., p. 101.

overhauling, but no spare parts are to be had.⁴⁰ Such is the case in most of the factories; "it has been found that breakdowns of machinery is the scourge of the rolling mills."⁴¹ Most of the factories produce a large amount of defective goods, more than would be tolerated in capitalistic countries where plants are in the hands of private corporations. In the metallurgical factories there is a very large amount of faulty construction, for much of it is not as high quality as demanded to meet the needs. In some of the typical factories the amount of defective goods was:

Djerjinsky Factory (wrought iron plates), 32%; Djerjinsky and Pertovsky Factory (steel parts), 40%; Verkhynye-Turinsk Factory (steel parts), 100%; Lapayevsky Factory (sheet metal), 40%; Nadiejdinsky Factory (high quality steel), 30%; and Marti Factory (steel), 32%.⁴²

Also, there is a shortage in the amount of goods produced when compared with the standards set by the Piatiletka, or Five-Year Plans. Some of these shortages indicated in percentages are: "coal, 12%; steel, 15%; pig iron, 15.5%; electric power, 7%; freight cars, 18%; and oil and mining, 20%.⁴³ However, these

⁴⁰E. Vinogradova, "Red Industry Confesses," Literary Digest, CXXIV (September 4, 1937), 24.

⁴¹J. Stalin, Soviet Union, p. 261.

⁴²Levine, op. cit., pp. 109-110.

⁴³"Soviet Saddles Blame on Saboteurs," Business Week, (April 3, 1937), p. 54.

figures were compiled by enemies of the Soviet, and may not be correct.

Despite the claims of others, Russia still insists that heavy industry has made rapid strides, and asserts that the Plan has been successful. To repudiate the figures released showing shortages in production, it has given statistics to show the fact that the value of heavy industry increased 200 per cent from 1931 to 1935.⁴⁴ In proof of its claims, Russia has submitted the following chart, which shows how much the increase in production has raised the rank of Russia in industry:

TABLE 2
PLACE OF U.S.S.R. IN WORLD PRODUCTION*

	1913	1938
Gross output in heavy industry.....	5th	2nd
Electric power.....	15th	3rd
Superphosphates.....	16th	3rd
Machine building.....	4th	2nd
Tractors.....	none	2nd
Harvester combines.....	none	1st

*"Place of U.S.S.R. in World Production," Soviet Russia Today, (June, 1939), p. 32.

This indicates that within the last twenty-five years the Soviet has made startling progress and must be considered one of the leading industrial nations of the world, even if most of the products are consumed within the country.

⁴⁴J. Stalin, Soviet Union, p. 228.

People, facts, and figures are constantly divided on the question of progress in manufacturing; some say no progress has been made, and give figures to prove it, while others aver that much progress has been made, giving figures to back their statements. It is apparent that the Communists have made progress in heavy industry. It is evident that the people are obtaining more benefits from their labors than they did a few years ago; this would indicate that they are beginning to stress development of light industry. The leaders of the country must be satisfied to a certain extent with the progress of heavy industry, or they would still be placing the emphasis on that line.

CHAPTER IV

LIGHT INDUSTRY

In light industry, or production of goods for the consumer, the Russian program has been less ambitious than it has in the construction of machinery. It was necessary to produce the means of production before it could undertake large-scale manufacturing of textiles and other light articles. Failure to produce goods for the consumer has been one of the major criticisms of the Soviet, for despite its vast industrialization project, its workers could not obtain sufficient supplies of needed goods. The fact that light industry has progressed more slowly than the heavy is the result of a deliberate policy; however, the decrease of production is due not only to design, but also to circumstances, mainly a lack of raw materials which it has not been able to produce or obtain.¹ This shortage of raw materials is not as serious now as it was a few years ago, and is not as much a problem as formerly. Within a few years Russia plans to be as self-sufficient as any country, for it has a vast amount of land, located in a great variety of climates, from which to obtain supplies.

¹M. Farbman, Piatiletka, p. 115.

The forestry and lumber industries are especially important today, for Russia sells more lumber than any other nation in the world. Also, the allied fields of pulp, paper, and wood distillation are considered important, even if no large-scale plans have been made for them. Much of the lumber used within the country is sent to Leningrad, where the most important ship-building yards are found.² Lumbering will undoubtedly be one of the leading businesses of the U.S.S.R. within a few years, for it has forests in excess of its needs.

With the rapid rise of construction of factories and houses in the cities, there has consequently been an increase in the production of bricks within the country, although the supply does not yet meet the need, for the kilns cannot begin to produce enough bricks to erect the proposed buildings. By 1932 the output had been increased from two billion to ten billion bricks,³ though of a poorer quality; it has been estimated that of all the bricks produced only twenty per cent could withstand the established methods of loading used in the Soviet.⁴ But, once again, it must be said that the figures may be erroneous; from the percentage given it would seem that there has been a slight exaggeration.

One of the most important fields of production in light

²G. T. Grinko, Five-Year Plan of the Soviet, p. 75.

³Ibid., p. 115.

⁴I. D. Levine, op. cit., p. 110.

industry is chemicals. The Soviet has realized the importance of a well established chemical industry to a nation, and has taken steps to build their plants on a sound basis. In organizing this industry it has built plants at:

- (1) Donetz Basin; (2) territory adjoining the Dnieprostroy hydro-electric plant; (3) Central Industrial region with its coal and peat resources; (4) Ural region, where the by-products of coal combustion, coking and non-ferrous metal smelting can be utilized; (5) Northwest region, with its peat formations, lumber industry and hydro-electric plants; and (6)⁵ Kuznetsk Basin, Central Asia, and Trans-Caucasus.

In the Ukraine, especially in the mining belt of the Donetz Basin, and Dnieprostroy and Krivoy Rog districts, have been constructed the largest chemical projects in the Soviet. These plants produce synthetic ammonia and convert fixed nitrogen into mineral fertilizer. The Donetz plant produces calcined soda, and a new soda plant, with a maximum capacity of 200,000 tons, is being constructed at Slavyansk. The Central Industrial region is to be the site of a large fertilizer works, based on the Yegoriev phosphate deposits and the Bobrikov Central electric power plant. However, the Central Industrial plant will have a special field of developing refined chemical products, such as dyes, pharmaceutical products, rare elements, and rubber goods. Leningrad is to produce superphosphates, and is the site of a mill for the production of rayon. In the Urals are found pyrites, phosphates,

⁵Grinko, op. cit., p. 108.

potassium, and iron, which is necessary in Russia, since one of its by-products is phosphate. Plants have been constructed at Soldinsk to produce fertilizer, which gets flue gasses from cooking establishments, sulphuric acid from copper smelters at Bogomilov, and phosphates from Viatka. The Magnitogorsk plant has a special department for the manufacture of nitrate fertilizers. The peat-using electric station in the Yaroslavl district is to serve as the base for a large rubber plant, which has already begun production.⁶ From the amount of attention being given to the chemical industry, it can be seen how important it is considered in Russia.

Even in the production of candy has Russia been increasing its output. One might think that there would be a need of production of articles of necessity more than of sweets. But, Russians put into use some of the small shops that existed under the Tsarist regime, and are producing quite a large amount of candy. The outstanding producer is the Red October Factory in Moscow. It is now making two hundred tons of chocolate per day, an increase of more than eight times the production before 1917.⁷ Keeping in trend with modern times, Russia is now using waxed paper and cellophane to wrap its chocolates. In marketing their wares the Moscow factories

⁶Grinko, op. cit., p. 109-110.

⁷M. L. Lamont, "The Red October Candy Factory," Soviet Russia Today, (March, 1940), p. 23.

have organized a special trust, the Mosselprom, which has scores of retail stores over the city to sell only its products. Belonging to the Mosselprom are also factories which produce tobacco, beer, and fancy baked goods.⁸ Organizations similar to the Mosselprom exist in most of the cities, serving as a satisfactory means of putting the products of the factories before the consumers.

Especially in the production of textiles the Soviets have filled only a small part of their needs. But the output is increasing at a steady rate, as is shown by very impressive figures. In the year 1931, the output of cotton yarn was 246 million meters; woolen wear, 132.7 million meters; silk, 18.5 million meters; and artificial silk, 1174 tons.⁹ But these figures are seen in a different light when it is remembered that the cotton industry has improved its position very little since 1930. However, in the production of cotton goods there has been more progress than we realize, for practically all of it is used in the Soviet. Nevertheless, it must be admitted that there was a drastic slump in production. In 1932 the output of cotton goods was 16.7 per cent below that of 1928-29, when it totalled 2,353,000,000 meters.¹⁰ The production of cloth and woolen goods amounted to half a yard per person, 1932 figures, and the manufacture of cotton goods of every description amounted to about 18 yards per person on

⁸C. B. Hoover, The Economic Life of Soviet Russia, p. 23.

⁹Farbman, op. cit., p. 115.

¹⁰Ibid., p. 115.

an annual basis.¹¹ In related fields, the output of woolen yarn and silk showed an increase of only 3 per cent and 4 per cent respectively in 1932 over that of 1930. The production of woolen and linen goods has been slightly better, but the increases has been comparatively small. The production of woolen goods in 1938-29 was 115,000,000 meters; in 1929-30, 205,000,000 meters; an increase of 12 per cent.¹² Artificial yarn shows a startling increase of 200 per cent; but that is rather misleading since the production of artificial silk and woolen goods in the Soviet Union did not really begin until 1930.¹³ Many of the figures released on increase of production show great gains, but often this is because many articles were not made previous to their Industrial Revolution.

Meanwhile, the leather industry made considerable progress, and in some branches there was a rise of 27 per cent in production. The manufacture of shoes and boots increased very heavily; in 1928 production amounted to 38 million pairs, in 1929 to 62 million pairs, a rise of more than 60 per cent; but the quality of the goods was poorer.¹⁴ Russia manufactured in 1928 enough shoes and boots to provide every person with two-fifths of a pair per year, or at the rate of one pair every two

¹¹Ibid., p. 116. ¹²Levine, op. cit., p. 97.

¹³G. Dobbert, Red Economics, p. 104.

¹⁴Farbman, op. cit., p. 116.

and a half years. The first Plan called for an increase in production sufficient to give every person three-quarters of a pair every year, or one pair for each year and four months.¹⁵ This increase would not meet the needs of the people, but it would be better than what they have been getting.

The increase in production has not made possible sufficient supply of goods. One reason for this may be the fact that a large amount of the goods produced were of poor quality, and consequently do not give the service they should. It has been estimated by some sources that the amount of materials unfit for usage produced in the Melange Syndicate, a system of factories, was as much as 93.98 per cent in April, 1932, and 92.37 per cent in May of the same year. Also, that according to figures taken from the People's Commissariat of Workers' and Peasants' Inspection, the percentage of defective rubber goods reached 14 per cent, and of shoes 13 per cent.¹⁶ However, it is hard to believe that factories produce as much poorly made goods as is often claimed, for if it were the truth they would not allow enemies to obtain statements and figures concerning the output. It would seem that the estimates given are based on assumptions rather than on facts. So one cannot fully believe that they make only defective articles. It has been claimed that the textile industry broke all records in production

¹⁵Levine, op. cit., p. 97.

¹⁶Ibid., p. 110.

of materials that could not be used. The average percentage of faulty goods in the different textile factories has been estimated at fifty per cent.¹⁷ On the other hand, figures have been released which prove that factory production in 1929-30 is more than twice the 1913 figures in quantity.¹⁸ It is probable that both of these sets of figures are exaggerations, for it is natural for Russia to desire to show the world how rapidly it is advancing, and for its enemies to attempt to offset any statements made concerning these advancements. Certainly efficiency among the workers is not one of the strong points of the system; so they undoubtedly do produce a great amount of defective goods.

In the fields of light industry discussed the statistics given will indicate the amount of progress made by the Soviet Union. It is true that much of these goods is not of the best quality, and many cannot be used at all, but it must be admitted that it has done much better than the Tsarist regime in satisfying the needs of the people. The country has had a hard time replacing the homecraft industry, which is one thing that has retarded its work. Another factor which may be responsible for the large percentage of defective goods is the fact that much of the light materials are produced in prisons. Even in our own country articles manufactured in prison are usually inferior in quality. But, regardless of quality, the people are receiving more benefits from their labor today than ever before, which was one of the purposes for organizing socialized industry.

¹⁷Ibid.. p. 110. ¹⁸R. C. Hopper. Pan-Sovietism, p. 180.

CHAPTER V

SOURCES OF SUPPLIES

One of the major problems of the Soviet Union in fulfilling its plans for industrialization is the obtaining of sufficient supplies to justify the building of factories. It has been claimed by many people that they do not have sufficient deposits of coal and iron, not to mention other raw materials, to make industry remunerative. On the other hand, many of the officials claim that the country is practically rolling in wealth, and that its undeveloped resources give industry unlimited possibilities. The question will never be settled by argument, but will probably be determined sometime in the future, when the resources of Russia are exhausted prematurely or at last until industry has been justified by suitable dividends.

One of the major problems of any industrial nation is natural resources, especially fuel. If no abundant fuel supply is at hand, it is difficult for a country to make much progress in manufacturing. The amount of the Russian supply is one of the question marks concerning its industrialization today. If it is not more abundant than is claimed, Russia may find that its factories will be only monuments to dreams. However, the Soviet claims that the fuel supply is now adequate and that new sources are being found.

In developing the oil resources of their country, Russians have not begun to use anything near their potential supply. Just how much oil there is has not been fully determined, but geologists have estimated that only 29 per cent of the Russian oil is located in the Caucasus field, centered at Baku, which at present supplies almost 75 per cent of the total output. Geologists insist that 32 per cent of the nation's oil is located in the new zone between the Volga and the Urals,¹ and will be a great help to industry within the next few years. The supply has been greatly increased under the Communists, for in 1913 only 7,669,000 tons of oil were produced, while in 1938 it has risen to 22,000,000 tons.² This increase has not been continuous, since production was only 7.2 million tons in 1925.³ However, if past experiences mean anything, oil will not help industry as much as might be expected, for when oil is converted into horse-power, in terms equivalent to coal, it shrinks tremendously. Still expressed in terms of coal, the oil reserve has been estimated to be eight-tenths of one per cent of the power resources of all the Soviet Union and 3.8 per cent of those of European Russia.⁴ So the development of new oil fields, while undoubtedly needed, would be worth much less than the finding of new coal deposits.

¹"What Will Russia Do in Balkans?" Business Week, (December 16, 1939), p. 56.

²I. Schneider, "Baku-Soviet Oil Metropolis," Soviet Russia Today, (May, 1940), p. 15.

³G. Dobbert, Red Economics, p. 101-102.

⁴I. D. Levine, Red Smoke, p. 26.

Another source of fuel is peat. The Soviet increased its production from 2.5 million tons in 1923 to 3.4 million tons by 1913.⁵ Although peat is not one of the important fuels, it is being used to supply power wherever possible, and peat-consuming electric stations have been built, the outstanding one being at Yaroslavl.

Another minor source of power is the timber supply. Russia's northern provinces abound in timber, and Siberia has the best supply in the world. But the industrial centers cannot depend on these remote sources for fuel. Even Siberia, with its tremendous supplies, suffers from shortage of firewood.⁶ At present, it is too inaccessible to be considered as a source of fuel.

There are other sources of energy, such as water power, the wind, and, theoretically, the sun.⁷ Of the latter, it may be said development is purely experimental work by scientists. It has been proved that the sun may be used in producing energy, but it has not been determined whether or not the sun can ever be harnessed sufficiently to supply power to operate factories. Perhaps sometime in the future factories may be operated in this manner, for stranger things have happened.

⁵Dobbert, op. cit., p. 102.

⁶Levine, op. cit., p. 24.

⁷Ibid., p. 22.

Electrification cannot be considered at this point, for it takes other sources of power to produce electricity. The complete electrification plans may be of interest, for they embody the spirit of the Soviet, but they cannot be a deciding factor in the problem of fuel. The plan for electrification has been discussed previously; so there is no need to repeat it.

That Russia needs fuel may be realized by a statement made concerning the supply: "The fundamental task of the Plan is to insure the development of our national economy by providing it with a firm fuel base which would render the supply of fuel completely stable, and, above all, immune from shortage or crisis."⁸ The following table shows that a country having the rapid industrial development of the Soviet would need more fuel than is at present available. From this chart may be obtained the increase in production from 1927 to 1933, and the percentage of that increase. Whether or not it is sufficient to meet its needs is not easy to determine, for they would naturally aver that it did, while others would be inclined to state that there was a drastic shortage. Table 3, showing fuel production in the U. S. S. R., follows.

⁸Levine, op. cit., p. 16.

TABLE 3
FUEL PRODUCTION IN THE U.S.S.R.*

Type of fuel	Annual Production		Percent of 1932-33 to 1927-28
	1927-28	1932-33	
Wood (millions of cubic meters)	50.5	59.8	118.2
Peat (millions of tons) .	7.2	16.0	222.0
Coal, total production (millions of tons) . . .	35.5	75.3	212.1
(a) Donetz	27.3	52.5	193.7
(b) Others	8.2	22.8	278.0
Crude oil (millions of tons)	11.7	21.7	185.0
Fuel oil (millions of tons)	8.3	12.5	152.0
Total (millions of tons of stable fuel) . . .	57.6	105.3	182.8

*G. T. Grinko, Five Year Plan of the Soviet, p. 83.

As in other countries, the principal supply of power comes from its coal fields. So Russia has been concerned with increasing its supply. The pre-war output was only 23 million tons, but rose to about 36 million tons in 1927-28. The First Five-Year Plan provided for the trebling of the pre-war output within a period of five years. Accordingly, in 1928-29 production reached 40 million tons. But the supply was not sufficient; so the terms of the Plan for 1929-30 were increased from 46 million tons to 52 million tons, which was fixed originally at 52 million tons, was changed to 75 million.⁹

⁹M. Farbman, Piatiletka, p. 107.

Russia has distressingly few coal fields, and these are in such locations as to handicap the development of industries. It is estimated that 95 per cent of the coal is in three regions: the Donetz Basin, with 14.4 per cent; the Kuznetsk, 69.6 per cent; and the Irkutsk Basin, with only 11 per cent. To further complicate matters, the distance between the Kuznetsk and Donetz reserves is 2,500 miles. Such, also, is the case of other Russian sources of power. Eighty-five per cent of the oil supply is in the Caucasus; 82 per cent of the timber area is in Northern Asia; 12 per cent in the Northern zones of European Russia, and only 6 per cent in the rest of the territory. Yet, the industrial regions are located almost entirely in Europe. Here, in 1932, was found 95.6 per cent of the industries, while only 4.4 per cent are in Asia.¹⁰ However, since many of these statements were made, the Soviet, under the Third Five-Year Plan, has made plans for the development of industries in Siberia. To what extent these will succeed we will have to learn in years to come, for the plans have yet to be carried to completion.

The principal supplies come from the Donetz Basin, and will continue to do so until the resources of coal in the Kuznetsk Basin, whose reserves are estimated at five times that of the Donetz Basin, can be developed and adequate means of transportation from the mines to the industrial centers can

¹⁰Levine, op. cit., p. 36.

be arranged. Already some of this coal from the Kuznetsk Basin is being used in the industrial regions, but production has not yet reached capacity.¹¹ If reliance can be placed on estimates, the Donetz Basin possesses three-quarters of one per cent of the world's total coal supply. Compared to this, the United States has coal reserves amounting to forty-eight and six-tenths per cent of the world's total deposits. However, while the United States has over fifty times the coal resources of European Russia, it has only seven times as much as all of the Soviet Union, for seven-eighths of their coal is located in Siberia, a territory almost two and a half times the size of the United States, with a population of only twelve million peoples.¹² In the case of Bureyastroy, there are deposits of coal and iron so intermingled that they can be utilized on the spot by the local foundries. It is also estimated that the coal deposits there amount to two billion tons.¹³

It had become apparent to the officials by 1931 that coal production was not making the desired progress and that drastic steps must be taken to increase the rate of output. The officially published statements did not show a shortage, but, nevertheless, it existed. The figures released showed that

¹¹Grinko, op. cit., p. 83. ¹²Levine, op. cit., p. 18.

¹³"Three from the East," Living Age, CCCL (August, 1936), 488.

the coal industry had made very remarkable progress, producing in 1931 56 million tons of pit coal, as compared with 17.6 million tons of pit coal in 1925.¹⁴ Statistics released by the government would lead one to believe that the fuel output was very satisfactory, and sufficient to supply demands. In addition to these statistics, they released figures on the volume of coal mined, which show the sources and the output of each. The chart below is a statement of the government on their accomplishments and reveals that the percentage of production in the Donetz Basin decreased almost 7 per cent from 1928 to 1933, while in all of the other districts the percentage increased, with the exception of the Eastern Siberia field, which has lost one-tenth of the one per cent in the same period of years. Also, it reveals that the total output for the same period of years has increased from 35.40 million tons to 75 million tons.

TABLE 4
COAL PRODUCTION IN U.S.S.R. BY DISTRICTS*

Coal Fields	1927--1928		1932--1933	
	Production (mil. of ton)	Percent of total	Production	Percent
Donetz	27.26	77.00	52.5	70.1
Kuznetsk	2.46	7.00	6.0	8.0
Ural	2.00	5.60	6.1	8.1
Moscow Dist. . .	1.18	3.30	4.2	5.6
East. Siberia. .	1.91	5.40	4.0	5.3
Central Asia . .	.23	.70	1.0	1.3
Caucasus11	.30	.6	.8
Total	35.40	100.00	75.0	100.0
	35.15	99.30	75.4	99.2

*Grinko, op. cit., 84.

¹⁴Dobbert, op. cit., p. 101-102.

Table 4 would indicate that Russia may be supplying sufficient fuel to meet its needs, for the increase in amounts produced is very substantial. Whether fuel is found in large enough quantities to supply a great industrial nation can only be settled by time.

In expressing the need for extending the industrial regions, Stalin said:

You know we have experienced already a shortage of Ukrainian coal and metal. You know that we are now forced to create a new coal and metallurgical base in the East--the Ural-Kuznetsk Basin. We must create a further metallurgical base in Siberia itself to satisfy its growing needs.¹⁵

It is well known that the Ural region is running short of fuel, and that the government is having to make plans for importing coal from the Kuznetsk Basin. With the construction of the Magnitogorsk and other metallurgical plants it will be facing a growing shortage of coal. Also, it is faced with the problem of putting the boiler-room equipment into order, for in this manner they will be able to save quite a large amount of fuel.¹⁶ The boiler-rooms are notorious for the large quantities of fuel that they consume. Undoubtedly, Russia will in the near future take steps to correct this inefficient use of fuel so as to make the fuel supply last longer.

¹⁵J. V. Stalin, The New Russian Policy, p. 11.

¹⁶Grinko, op. cit., p. 81.

But fuel is not the only resource of the Soviet, only one of the more important. The value of the Ukraine alone is tremendous, for from that province comes more than half of its iron ore, which is so essential to industry, 40 per cent of its manganese, and most of its mercury and aluminum. Here, also, is located much of the industry; more than 10 per cent of the machinery of the nation is produced in the Ukraine. Too, this province generates more electricity than Sweden.¹⁷ The value of the Ukraine is recognized not only in Russia, but abroad as well; at least one of the European dictators would like to own it, for Hitler, in a speech made just before the historic meeting at Munich, said: "If the Urals with their incalculable wealth of raw materials, and the boundless cornfields of the Ukraine lay within Germany, under National Socialist leadership, the country would swim in plenty."¹⁸ This Ural region referred to is the site of pyrites, phosphates, and potassium, not to mention iron ore, the location and output of which has previously been discussed as a correlative to heavy industry.

The gold supply of Russia is of unknown quantity, but recently new fields have been located on the Yenesei River and at Yakutsk on the Lena River. Smelters for these new

¹⁷"Business Abroad," Business Week, (December 16, 1939), p. 56.

¹⁸Ibid.

fields have been located at Krasnoyarsk on the Yenesei and at Sretensk.¹⁹ Experts estimate the unmined gold reserves as totalling 10,000,000 pounds, valued at \$3,000,000,000. If the mining and extraction costs are calculated as amounting to fifty cents per dollar, then the gold reserves in the ground would be worth only one-half of the hoard of gold in the Bank of France, and about one-third of the bullion held by the United States. Russia's unmined gold is but twice the amount which France took out of the United States within a period of six weeks in the summer of 1931.²⁰ This would lead one to assume that it does not have the gold reserve needed. But what country, with the exception of the United States, has more gold than it needs? Besides, the Soviet, interested in supplying the needs of its people, and not trying at present to compete with foreign countries for world trade, does not need as much gold as other countries for foreign exchange.

There are few silver deposits, estimated at slightly more than three million pounds, valued at about \$20,000,000. Russia is forced to import over 96 per cent of her silver requirements, which are not very great. The highest output of silver came in 1912 when two-thousandths of one per cent

¹⁹Grinko, op. cit., p. 110.

²⁰Levine, op. cit., p. 52.

of the world production was made. The banner year of production yielded by one per cent of the United States' average annual production during the last five years.²¹

The Communists have been unfortunate in one field; the platinum market of the world has declined since the World War, and they have a platinum reserve, conservatively estimated at about \$250,000,000. The production of platinum amounts to some \$3,000,000, but remains an unimportant factor, even as the wealthy manganese mines in the Caucasus provide only a small annual revenue.²²

Among the less important resources are the phosphates, the values of which have increased in the last few years. Phosphates are found at Yegoriev, in the Ural Mountains, and at Viatka.²³ The phosphates are valuable for the production of fertilizers to be used on the vast Soviet farms. Even the large factory at Magnitogorsk has a division for the production of nitrate fertilizers.

These are the nation's leading resources, and upon the extent of these may rest its future. A nation cannot hope to be a manufacturing country unless it has vast resources on which to draw. Russia may be an industrial leader for years, or for only a short time. The extent of her resources will determine her industrial future.

²¹Levine, op. cit., p. 53-54.

²²Ibid., p. 54.

²³Grinko, op. cit., p. 110.

CHAPTER VI

HINDRANCES TO MANUFACTURING

The Soviet Union has undertaken a gigantic industrialization policy and has made rapid progress. If the Revolution could be entirely disregarded, the work of the Soviet would be revolutionary in itself. But it cannot be ignored, for the events occurring in those blood-stained days of upheaval left distasteful memories in the minds of people in most of the countries of the world. She made enemies even before her government was established, and these enemies have done their part to hinder the progress of the country. Even in the United States we have become prejudiced against Socialism and Communism largely because we associate the terms with the Bolshevik regime, which was closely connected with wholesale man-slaughter. This feeling of antagonism prevented the United States from even recognizing the Soviets as a nation for several years, and was responsible for the lack of trade between Russia and the United States. Perhaps the fact that they were a potential consumer of millions of dollars worth of American machinery influenced the government to recognize them, and at the same time make a trade treaty with them. As in the United States, the feeling of antagonism by other countries hurt the industrialization program in the Soviets, for

they could not trade freely with the world, which deprived them of many needed supplies.

The most serious blow to the industrialization policy of the Communists from within the country can be traced back to the forefathers of Russia. The people had never been mechanically inclined, and had no experience in handling machinery. Securing skilled labor for the factories has been the most serious problem of the Soviets, one which they have not been able to solve even to the present time. The First Five-Year Plan made a demand for more than 1,200,000 engineers and technicians. At best not more than 300,000 were to be obtained in Russia.¹ It is difficult to get technicians from foreign countries, for the men do not, as a rule, like to live in Russia, even though the salaries are very good. Naturally, with the shortage of skilled labor, "efficiency of operation and quality of output remain weak spots in the Soviet drive for industrialization."² This will remain the case until the Soviet has among its own inhabitants enough skilled workmen to supply demands. So, "Soviet Russia's major handicap is neither scarcity of food nor shortage of goods, but an absence of technical skill."³

¹Farbman, op. cit., pp. 61-62.

²Chamberlin, op. cit., p. 55.

³L. Fischer, "The Brake on Soviet Industry," Current History, Vol. XXXVIII, (July, 1933), 414.

Another of the major hindrances to manufacturing is the extremely high cost of production in the factories. The reason is quite easy to see: workers had no experience in running factories, so it was quite natural that costly errors were made. Unskilled laborers had to be used until they obtained some degree of efficiency, and it was quite natural for them to waste materials through poor handling of machinery and production of faulty goods. Also, factories existing when the Soviet was organized were poorly located with regard to raw materials and transportation facilities. An example of this is the cotton manufacturing industry: the factories, built under the Tsar, were located at Moscow, while the cotton was raised in Turkestan, hundreds of miles away. This situation was similar to that of the United States in the days before the South became interested in manufacturing cotton goods. The Soviet considered moving the factories to Turkestan, but decided that the cost would be excessive. Instead, they built better gins in Turkestan, which aided in the production of whiter cotton.⁴ The cotton industry was not the only one in this situation. The locations of iron and coal deposits have necessitated building foundries away from the sources of supply, for in some cases, as has been previously revealed, the distance separating the fields was as much as two thousand miles. Naturally this increased the cost of production.

⁴Dobbert, op. cit., p. 97.

Another important hindrance is the production of defective goods. Russia has undoubtedly set a record in the production of materials which cannot be used, if we are to believe some of the statements which have been made. In the metallurgical factories the following estimates have been given as to the amount of defective goods: "Djerjinsky Factory (wrought iron plates), 32%; Djerjinsky and Petrovsky Factory (steel parts), 40%; Verkhnye-Turinsk Factory (steel parts), 100%; Lapayevsky Factory (sheet metal), 40%; Madiejdinsky Factory (high quality steel), 30%; Marti Factory (steel), 32%."⁵ Another of the factories in Southern Russia "manufactures pencils, 5% of which contain no black-lead, and are only polished wooden pegs with a hole in them."⁶ In another case, a match-factory in the Soviet produced quite a large number of safety-matches, which were undoubtedly the safest matches ever produced, for they had no heads on them.⁷ Then, there is the story told of the man who decided life was no longer worth living and would commit suicide to put an end to his troubles. Accordingly, he bought a new knife, determined to stab himself to death. But the blade of the knife was so poorly made that it bent every time he tried to carry out his plan. Finally, the man became

⁵Levine, op. cit., pp. 109-110.

⁶A. Karlgren, Bolshevist Russia, p. 97.

⁷Wm. C. White, Made in Russia, p. 202.

discouraged, abandoned his scheme, and decided to live.⁸ Another case of defective goods being produced in the factories is found in the textile factory of the Melange Syndicate, which in April, 1932, produced defective goods amounting to 93.98 per cent and in May of the same year 92.37 per cent. According to figures released by the People's Commissariat of Workers' and Peasants' Inspection, the production of defective goods in rubber and shoes reached 14 per cent and 13 per cent respectively.⁹ While some of these percentages sound unreasonably high, and probably are, it will give an impression of the problem the Soviet faces in improving production in their factories.

Another of the hindrances to Soviet production is general carelessness within the country. Mistakes were made, which with careful planning and supervision, could have been prevented. "Factories are built and, too late, it is discovered that the doorways are too narrow for the machinery that must go into them, and part of the factory must be torn down. Machines installed by American engineers break mysteriously. One American dynamo for a current of four thousand volts was attached to a wire for one of forty thousand volts. The resulting sparks were very pretty, but more government money was wasted. The largest tractor-plant in the world closed down after a few weeks of operation for reorganization because

⁸Ibid., p. 203. ⁹Levine, op. cit., p. 110.

the steel casting broke and because the various departments could not keep pace together."¹⁰ Coping with situations such as these is no small problem to the officials, especially since few of them are efficient businessmen.

At reasonably regular intervals there will appear articles in the newspapers stating that a worker, or group of workers, in a Russian factory has been arrested on the charge of sabotage. It is very likely that the Soviet would have many cases of sabotage by persons, posing as Communists, who might have been injured by the Revolution and would be glad to get some degree of revenge. Many of the breakdowns of machinery, however, which are termed sabotage may only be poor handling of machinery by unskilled laborers, who make mistakes through honest ignorance. However, when the Soviet officials are convinced that sabotage has been committed, severe punishment is meted out to the victim of Red wrath.

It has been found that the major trouble with Russian tractors is not in the machines themselves, but that the breakdowns, which are characteristic of these tractors, come as a result of poor drivers.¹¹ However, the drivers are not responsible for all the trouble, as it has been found that the pistons of the Russian tractors are a frequent source of

¹⁰ White, op. cit., p. 204.

¹¹ L. Fischer, "A Week in a Soviet Factory," The Nation, Vol. CXXXV, (September 21, 1932), p. 248.

difficulty.¹² It is the problem of the Soviet to train its drivers to handle the engines properly, which will take a long time. Also, methods of production at the factories must be improved. Russians must be able to see the mistakes made, and correct them from time to time. It is necessary for them to keep pace with the times, making improvements in their machinery, or the world will once again advance so much that the Soviet will be a backward nation.

In other branches of production the above is still true. It has been found that in general the looms of the textile factories were in need of repairs, for many of the parts were worn. Also, it was found that spare parts to replace the old ones could not be readily obtained.¹³ In the steel foundries there is a scourge in the form of breakdowns in the rolling mills.¹⁴ Here again the Soviet must concern itself with the problem of correcting these shortcomings.

It would be the natural assumption that if Russia produces such poor materials there would be difficulty in selling them. But this is not the case, for the public is anxious to purchase supplies at any and all times. "The customer stands patiently in line for hours. Humbly, gratefully, he accepts inferior

¹²L. K. Embirst, Trip to Russia, p. 42.

¹³E. Vinogradova, "Red Industry Confesses," Literary Digest, Vol. CXXIV, (September 4, 1937), p. 24.

¹⁴J. Stalin, Soviet Union, p. 261.

goods, shoddy garments, wormy vegetables, badly made shoes."¹⁵ Russia is one country in which the customer is not always right; either he takes what the store has and likes it, or does without. The problem is not finding customers, but avoiding them, for the stores have more customers than they can supply. Until the Russian factories produce more goods than the people demand, this will continue to be the case.

¹⁵E. Lyons, "The Customer Is Always Wrong," American Mercury, Vol. XXXV, (July, 1935), p. 302.

CHAPTER VII

WORKING AND HOUSING CONDITIONS

One of the most important accomplishments of the Soviet has been the improvement of working conditions. Under the Tsar, the peasant labored under conditions which were sheer torture. But it was in the towns that conditions were so unfavorable. The peasant lost much of his freedom under the increased power of the nobility, and even the freeing of the serf by Alexander did not greatly improve his condition. It had been the belief of the industrialists that the freeing of the serfs would provide an abundant source of cheap labor for the factories. But their plans miscarried, and the peasants did not turn to the factories to find employment.

The Revolution of 1917, however, changed the entire future of the workers and made them rulers of a vast nation, under Socialist leadership. This new government immediately concerned itself with the problem of socializing the means of production and bettering the conditions of the people.

It planned to bring about a situation under which the people could enjoy as much as possible the benefits of their labor. This necessitated shortening of hours, increasing the scale of wages, bettering working conditions in the factories, granting self-management to each local factory, with the

governing committee meeting with the directors, giving of vacations, raising the position of women workers, and divers other similar reforms.

Some of these reforms were badly needed, as was indicated by the position of women workers under the Tsar. The women were considered no better than beasts and had to do the work that oxen and horses should have done. They worked in the fields, pulling ploughs with their shoulders, or labored in the factories, working long hours for extremely low wages, on which they could exist but not live. It was the aim of the Soviet, upon taking over the management of the country, to improve these conditions, particularly the position of woman. Under the Soviet administration the women were placed on equal footing with the men. For the first time they were considered as a part of the laboring class; until that time they had been only a part of the non-privileged laboring class. But the position of women was so changed that now they are considered the equals of men. The Labor Unionists of the leading countries have objected to this method of treatment of women, but the Russians contend that if they are paid the same wages as men they must do the same work; if it is dangerous or unhealthy, they must endure the same risks.

Protection of women is an absurd Trade Union notion, completely out of date, according to them. Their hearts would be overjoyed to see the women here digging drains, working as builders' laborers,

shovelling sand, driving tramcars and doing heavy work side by side with the men.¹

We do not approve of this policy, but it must be remembered that the conditions of the women are much better now than under the Tsar.

Besides giving the workers charge of the factories, Russians have attempted to make their plants the best in the world in regard to working conditions. In fact, Walter Citrine, head of the Labor Unions of England, expressed the opinion that the Russian factories were the best he had ever seen.² As a rule they run the machinery by electricity, which is much better than other means of power.³

In the management of the factories the workers have not attempted to take advantage of the privileges given to them. One might think that the workers would agree to pay themselves high wages, work short hours, and set low standards of production, but this is not the case. The salaries are very reasonable; "the highest salary paid to a Russian worker of which I have a personal record amounts to 1000 rubles a month, earned by highly qualified engineers on the instructional staff

¹W. Citrine, I Search for Truth in Russia, p. 195.

²Ibid., p. 309.

³Wm. Maxwell, "Advances of Soviet Economy," Soviet Russia Today, (June, 1940), p. 30.

of a training institute."⁴ Of course, the workers receive salaries in proportion to the importance of their positions. New workers are induced to enter industries that are on the up-grade by improvements in the remuneration they can earn there.⁵

The slackers, persons not doing their full shares, are ridiculed in the factories by the other workers. With these are put the habitual drunkards, for seldom are they able to keep up with the quotas set. There are special Black Windows where the slackers and drunkards must go to receive their pay. As they draw their salaries, they are laughed at and jeered by the other workers.⁶ It is believed this treatment will in time embarrass them so much that they will try to make good workers.

The workers themselves take the fulfillment of plans as a personal matter. They do not let the superintendent of the factory force them to do better work, but try to do so on their own initiative. The workers vie with each other to see who can do the most work; the results are posted daily on bulletin boards for the entire group to see.⁷ This has been a very satisfactory means of stimulating more rapid production,

⁴B. Wootton, Plan or No Plan, p. 165-166.

⁵Ibid., p. 19.

⁶H. F. Ward, In place of Profit, p. 82.

⁷Ibid., p. 82.

but has caused to a degree the appearance of defective goods in the factories. When there is a shortage of manufactured goods, the best workers get first choice on the existing stock.⁸ This naturally encourages them to do their best work.

Another improvement is the establishment of health resorts where every worker may spend vacations. The resorts are of various sizes, but offer practically the same accommodations. In Kislovodsk there is room for about 6,000 persons at once. There are sixty rest homes with an average of about 100 beds; some of the larger homes had about 200 beds, but many of the homes were smaller. The Scientific Workers had room for 120. Thus, during the year, assuming that the periods are of three weeks' duration and are open the whole year, approximately 100,000 people could be accommodated. These homes have very poor provisions for games, volleyball being the only outdoor sport.⁹

Another of the government's means of improving the living conditions of the workmen is social insurance, which gives the worker protection without having to pay for it:

the workers do not pay a kopek of their wages for social insurance funds, which are provided by the industrial establishments. Social insurance

⁸Ward, op. cit., p. 33.

⁹Citrine, op. cit., p. 241.

guarantees to the workers their right to vacations, to old age security, sick pay¹⁰ and compensation for the loss of ability to work.

In this Russia has surpassed most of the capitalistic nations of the world and has provided security for their working class.

These improvements in the working conditions of the country have stimulated production, as is shown by the fact that the quantity of energy consumed in industry per worker per annum has risen from 1.12 in thousands of kilowatt-hours in 1926-27 to 2.4 in 1931.¹¹ Also, with the workers doing more and better work, the average wage has increased from two to three times since 1924. No figures for real wages can be exact, because of differences in the cost of food and clothing even in the same locality and still more because of the various additions to the income of the workers in the form of cultural and health benefits.¹² The workers of town and country are receiving 33.5 per cent of the national income, while the bourgeoisie get only 2 per cent. In other countries the latter class receives from 40 to 50 per cent.¹³

However, the rapid rise of industries naturally brought about a change not only in working conditions, but in the towns

¹⁰M. P. Vlasov, "The Factory Committee," Soviet Russia Today, (May, 1939), p. 14.

¹¹Ward, op. cit., p. 19.

¹²Ibid., p. 25.

¹³Ibid., p. 26.

as well. It is impossible for cities to grow from villages within two years time without drastic changes taking place--changes in the people, their thoughts, and mostly in their living conditions. [As has been experienced in Texas, when "boom towns" develop, their growth is so rapid that favorable living conditions cannot be provided, nor the existing ones maintained. People live in shacks, paying high rent for them, and are glad to get even poor food. One does not try to obtain a room--just a place to sleep and put a few possessions. Such is the condition of Russia today, for it is a nation filled with "boom towns."] Industrial centers grew overnight without a paralleling growth of lodgings for the workers. Now it is found that something must be done to provide homes for the workers; this is at present one of the major problems of the country.

Under the Tsar, housing in the cities was not a problem, for most of the population lived on farms and were not interested in city life. But, with the industrialization of the country, the people started moving to the cities, which resulted in congested housing conditions. The people were crowded together in the buildings much as cattle in railroad loading pens. The existing houses were not sufficiently large or numerous to provide shelter for the workers. Accordingly the Soviet began the rapid construction of tenement houses, barracks, and divers types of shelters for the people. In this way it took a very progressive step, surpassing the

actions of all other nations, for none had attempted to provide for their workers like this. The Soviet has not yet been able to provide necessary space, but they have improved existing conditions and are continuing to do so at top speed. It is their plan to provide suitable housing to the workers at very reasonable rates. Housing has become so congested that a worker is contented to share a room with several other men, or even rent a corner of one from some family that is not using quite all of the one room that most of the families enjoy. The Soviet has not been able to provide space that is required just for sleeping purposes, much less that necessary for health. In regulating the space per person in Moscow conducive to good health, the government fixed 86 square feet as the minimum; this fell to 43 square feet, and since then has been dropped still lower.¹⁴ In one region it was found that it allowed nine square meters per head, but this was not the standard desired--only a temporary measure. Even in many cases it was not possible to allow this much space.¹⁵

In order to cope with the housing problem, the Soviet is erecting large tenements as rapidly as possible. They are usually badly built five-story houses, with no elevators. They seldom have baths, although room is allowed for this,

¹⁴B. C. Hopper, Pan-Sovietism, p. 209.

¹⁵Citrine, op. cit., p. 144.

and usually there is only cold water. "You see them putting up large apartment houses of fifty, one hundred, two hundred or more apartments."¹⁶ Workmanship has been slighted and poor materials used in construction of these tenements. They depreciate rapidly, and in a few years will be little better than slums. The brick-work is usually rough, and there is scarcely a straight line in it. The work looks as if it had been done by amateurs.¹⁷ Some of the cooperative societies acting as small units of the Soviet, have built houses for workers within their societies. The members pay the society for several years in order to obtain housing accommodations, and naturally when room is available they receive the very best.¹⁸

Walter Citrine visited Russia in 1937, making a tour of the housing establishments in many towns; he reports on the conditions of houses and on the amount of space obtainable per family. In Leningrad had been provided accommodations for 250,000, but many were badly over-crowded even in these new tenements. But there had been an increase in population of about 100,000 within the last eight years. Housing has fallen so far behind that the authorities would need to build at least twice as fast as they are if they are to keep abreast. In the

¹⁶B. Thomas, "An American Worker in the Soviet Union," Soviet Russia Today, (May, 1940), p. 9.

¹⁷Citrine, op. cit., p. 94.

¹⁸Ibid., p. 108.

Kirov district most of the houses were old and decrepit, unpainted, wooden buildings. Even the newest houses were made of wood, and appeared hastily built.¹⁹

At Zaparozhe it was found that a modern apartment house would be standing beside a hovel, which was nothing more than a shed. The people living there cooked on a fire on the open ground. Even the apartment houses, which were three years old, were badly worn. The banister rails might be broken or missing. The doors and windows fitted badly, being made of a poor grade of wood.²⁰ Couples living in these houses made about 650 rubles per month, and paid for rent 40 rubles in the summer and 60 in winter. This additional sum was to cover central heating and electricity.²¹

In many towns barracks, similar to those for soldiers, were used for housing the workers. They had no inside lavatories, and on the whole were not fit for human beings.

At the end of one room there were two curtains made of bed sheets, and strangely enough, one was black and the other white. I was informed that two young fellows here had married a little time previously, and they and their wives lived behind these curtains. What happened was that the space taken by a single bed had been railed off in this inadequate fashion. The couples lived in the confident knowledge that all they said and did was heard by the men in the neighboring beds.²²

Forty thousand people lived in these barracks which had

¹⁹Ibid., p. 44.

²⁰Ibid., p. 207.

²¹Ibid., pp. 207-208.

²²Ibid., pp. 210-211.

accomodations for only six thousand. In some of the towns were shacks built together under one roof. "Five people living in one room in two beds, covered with rags for blankets. I wouldn't condemn my worst enemy to such a place."²³ The slums in the cities of England would not compare with these houses. The people were forced to live almost as uncivilized beasts, cooking over open fires and sleeping on the floors.

In some of the tenements for women, slightly better conditions were found. In one visited all the residents were single girls; they had done their best to make the place look decent. The bedclothes were fairly clean and the walls were colored with a yellow wash. There were no curtains; so people across the way could look with ease into the rooms. The buildings were so poorly constructed that in a few years they would undoubtedly be slums.²⁴

In one Shomian housing settlement there were 2,283 people living in 384 rooms; more than six people to the room. These people paid rent equal to approximately ten per cent of their salaries.²⁵ This may seem a very high rate to pay for lodging, for in contrast to the rent paid in the United States, it is out of reason. Very few American families pay as much as ten

²³Ibid., p. 212.

²⁴Citrine, op. cit., p. 230.

²⁵Ibid., p. 86.

per cent of their incomes for rent, but in this country houses are much more plentiful than in the Soviet.

The manner in which the Russians have adapted themselves to their conditions are often hard for us to understand. It is difficult to imagine married people living contentedly in a corner curtained off from a room full of men, or all of one family living in one room. The crowded conditions has put an end to privacy in the homes.

In one room there was a couch and a single bed. I was told by the woman who showed us around that this represented accommodations for the grown-up sister and brother of one of the tenants in the next room. I asked how they managed. Whilst I didn't want to say anything indelicate, it seemed to me there was no privacy whatever here between these two adults. The Russian just shrugged her shoulders and said "brother and sister," as though that was sufficient explanation.²⁶

It is conditions such as these that we cannot understand in this country.

But it is not the desire of the Soviet that these conditions exist; the leaders had much rather that they did not, and are doing all in their power to remedy them. Housing is being advanced as rapidly as possible; they are making every effort to give their workers the best possible. The Building Commission expects to complete the building of 100,000 flats of approximately three rooms each within the next ten years. These figures would cover the construction of every type of house, whether built by the municipality, the industries, the

²⁶Citrine, op. cit., p. 151.

trade union, or the co-operative societies.²⁷ If these flats run true to form, they will average in size about twenty by twelve feet, which will provide room for a family of three.²⁸ This could hardly be considered sufficient space, but it is certainly better than many of the people have at the present time.

Certainly they have made great strides in improving the housing conditions of the workers, but it must be remembered that there was plenty of room for these improvements. The Communists do not fail to point out the extent to which they have aided the people. They will point out that their country is making the most rapid progress of any nation in aiding the workers. "The Russians are justly proud of their achievements, but they should remember there are some other countries which have not stood still during the passage of time."²⁹ While all nations have not progressed so rapidly as the Soviet within the last decade, they surpassed Russia for more than a century. Today the United States is making startling changes in its economic program; even to the extent that they are not leaving us behind.

²⁷ Citrine, op. cit., p. 160.

²⁸ Ibid., p. 164-165.

²⁹ Ibid., pp. 177-178.

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